ESP 121: Lab 2

Age structure

Open `lxmx.R`, which uses fecundity (m_x) and survivorship (l_x) data from voles. For more about voles, see:
http://www.bbc.co.uk/nature/life/Field_Vole
http://www.arkive.org/field-vole/microtus-agrestis/
http://www.jstor.org/stable/1425 (the source of the data used in this lab)

Note that the intrinsic growth rate r and net reproduction R_0 are reported in the plot title, and you can choose whether to plot stable age distribution or reproductive values (plotted).

1. How does changing the survivorships or fecundities affect r, R_0, the stable age distribution, and the reproductive values? `lxcoeff` multiplies all entries l_x by that value, and `mxcoeff` does the same for all entries of m_x. Choose one of l_x or m_x to change and describe the effect on each output. You may want to save each plot to a pdf as you choose each value and whether to plot age distribution or reproductive values so you can compare them side-by-side. Pay careful attention to y-axis values as well as the shape of the distributions (e.g., where the peak is as well as how high) for the stable age distribution and reproductive values.

2. Now go back to the original survivorship and fecundity values (`lxcoeff`=`mxcoeff`=1), and change the age at maturity `xmat`. How does delayed maturation affect r and R_0 (increase or decrease with increasing age at maturity?), and why does it have this effect? How does it affect the shape of the reproductive values (i.e., how does the shape change as the age at maturity increases?), and why does it have this effect?